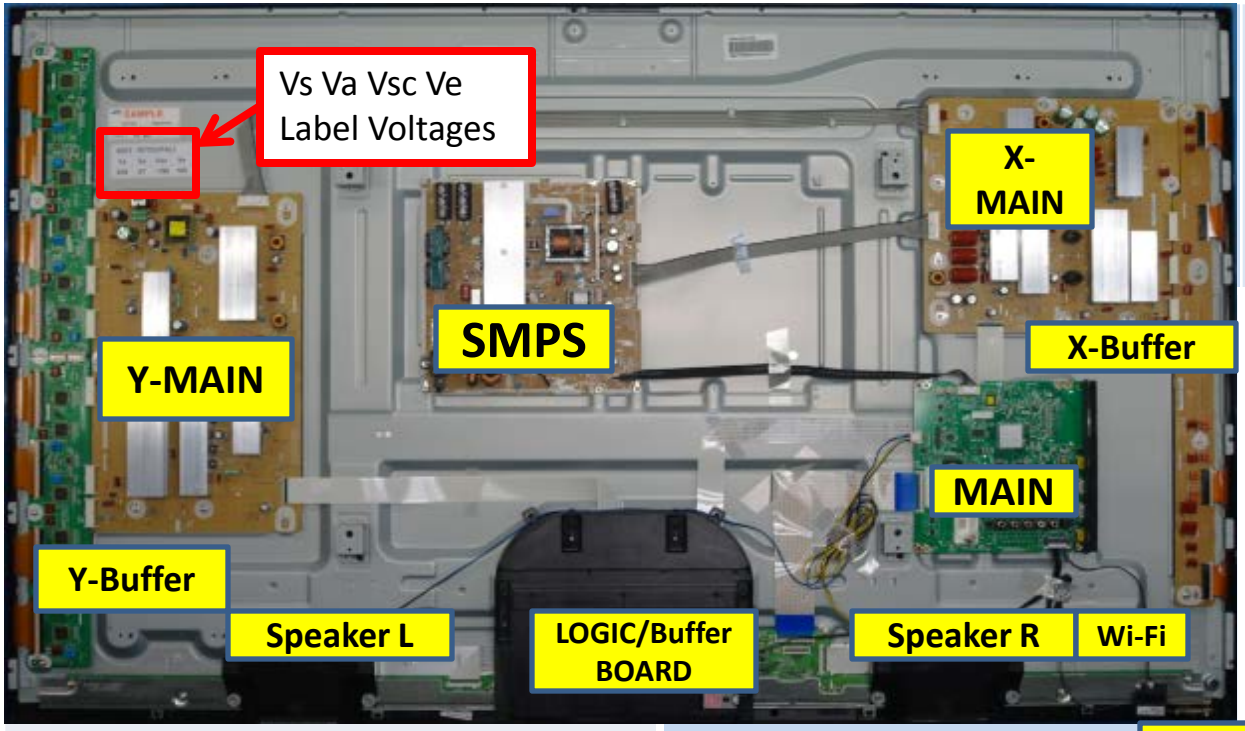
PN60E550D1FXZA Fast Track Troubleshooting Manual – Rev 6/13/12



HELP : 888-751-4086; 866-894-0637 FE)
GSPN
http://gspn3.samsungcsportal.com
PLUS ONE
http://my.plus1solutions.net/clientPortals/samsung

HOT TIPS

-New 2012 Model… always check for latest bulletins and firmware updates.
-New combined Logic/Logic Buffer Board.
-New Pentile Panel (60 inch only)

FIRMWARE

6/8/12 T-MST10PAUSC
6/2/12 T-MST10PAUSC Version 1013.3 resolves compatibility with DLNA devices.

Avail on GSPN or Samsung,Com

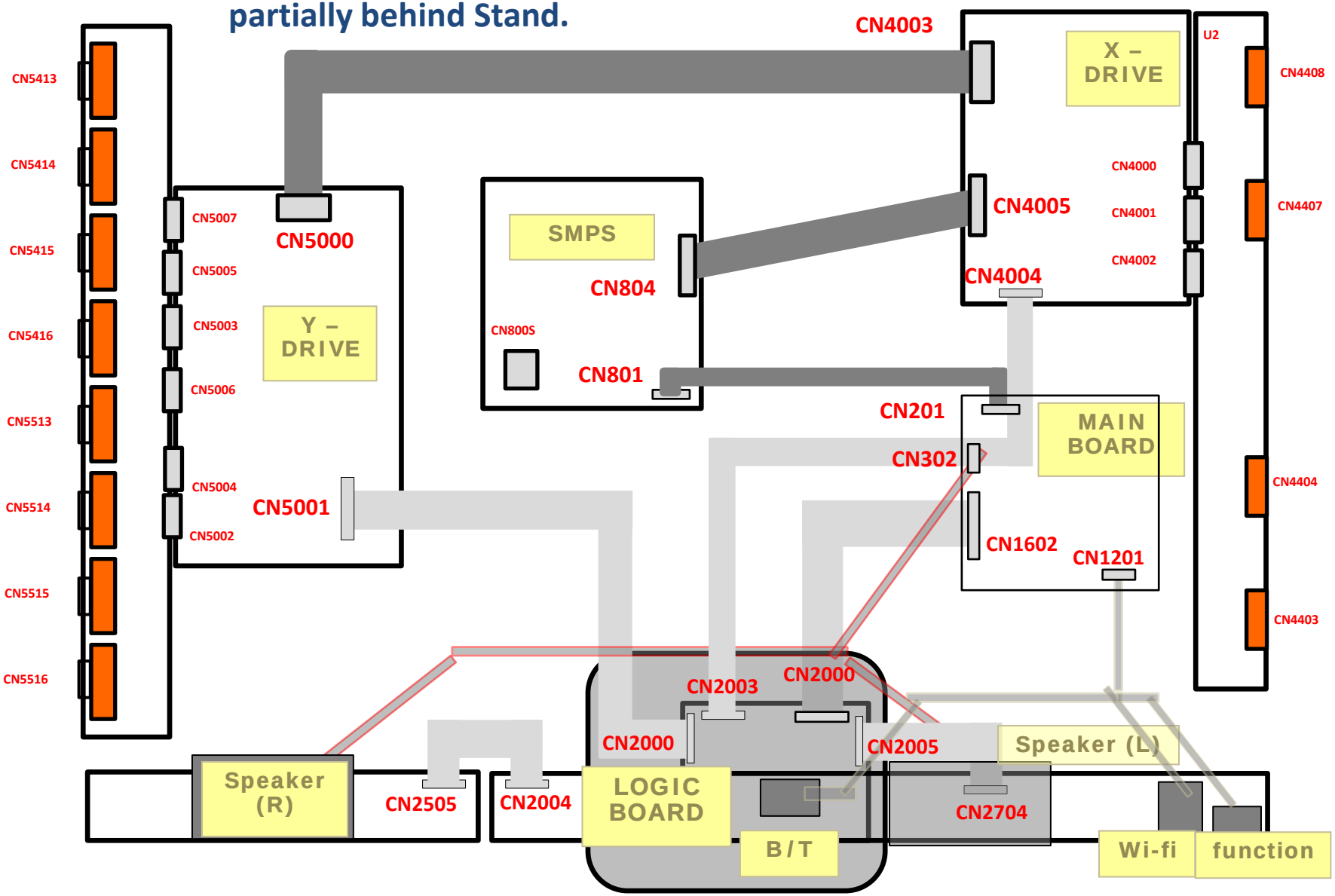
Always check for latest updates

SERVICE BULLETINS

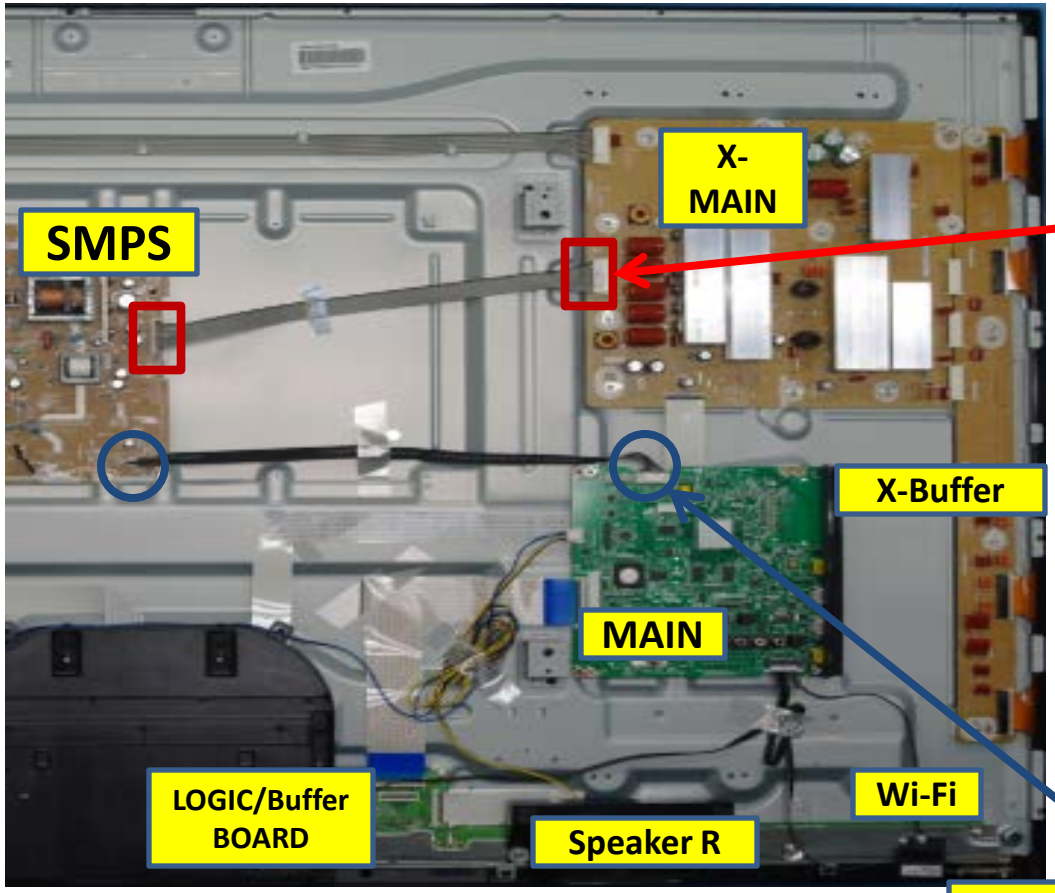
-6/6/12 ASC20120606001: Improve Eco Sensor, replace Function Board & Upgrade Firmware
-5/16/12 ASC20120515001: How to send TV's emergency data WD & AR data to SEA
- Quick Parts: Verify before Ordering

No	Parts	Version	Parts No	Short
1	PCB	TS02	BN44-00512A	SMPS
2	PCB	TS02	BN94-04644D	Main PCB
3	PCB	TS02	BN96-21431C	RF module PCB
4	PCB	TS02	BN96-21749C	Function PCB
5	PCB	TS02	BN96-22111A	Logic Main PCB
6	PCB	TS02	BN96-22112A	Buffer E
7	PCB	TS02	BN96-22113A	Buffer G
8	PCB	TS02	BN96-22114A	X Main
9	PCB	TS02	BN96-22115A	Y Main
10	PCB	TS02	BN96-22116A	X upper
11	PCB	TS02	BN96-22117A	Y - Upper
12	PCB	TS02	BN96-22118A	Y - Lower
13	Display	TS02	BN96-22102A	Panel
14	Cosmetic	TS02	BN96-16795A	Stand Base
15	Cosmetic	TS02	BN96-18641A	Stand Guide
16	Cosmetic	TS02	BN96-21995A	Front Cover
17	Cosmetic	TS02	BN96-22001J	Rear Cover
18	Cosmetic	TS02	BN96-22004A	Stand Guide
19	Compone	TS02	3903-000552	Power Cord
20	Compone	TS02	AA59-00579A	Remote
21	Compone	TS02	BN96-21672D	Speaker
22	Compone	TS02	BN96-22728D	LVDS Cable
23	Accessory	TS02	4301-000103	Battery
24	Accessory	TS02	BN63-02368B	Cleaning Cloth
25	Accessory	TS02	BN81-07013A	3D Glasses

Logic/Buffer Board combined & located partially behind Stand.



PN60E550 Power On Sequence



1. 5V STBY SMPS to Main
2. PS_ON Main to SMPS (all Low Voltages on)
3. PS_ON SMPS thru X-Board to Logic Board
4. VS_ON Logic Board thru X-Board to SMPS
   (VS & VA voltages turned on)

CN804 SMPS to CN4005 X Main

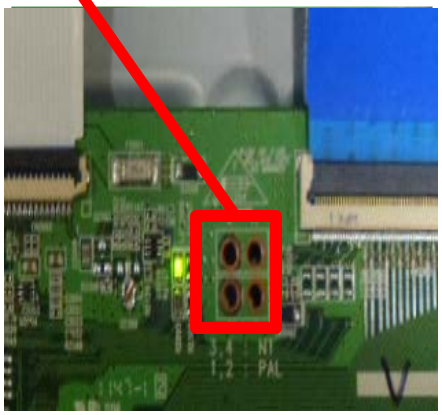
Pin No.	Signal
1	Vs
2	Vs
3	GND
4	Va
5	GND
6	15V
7	5V
8	GND
9	VS_ON
10	VS_CON
11	PS_ON
12	GND

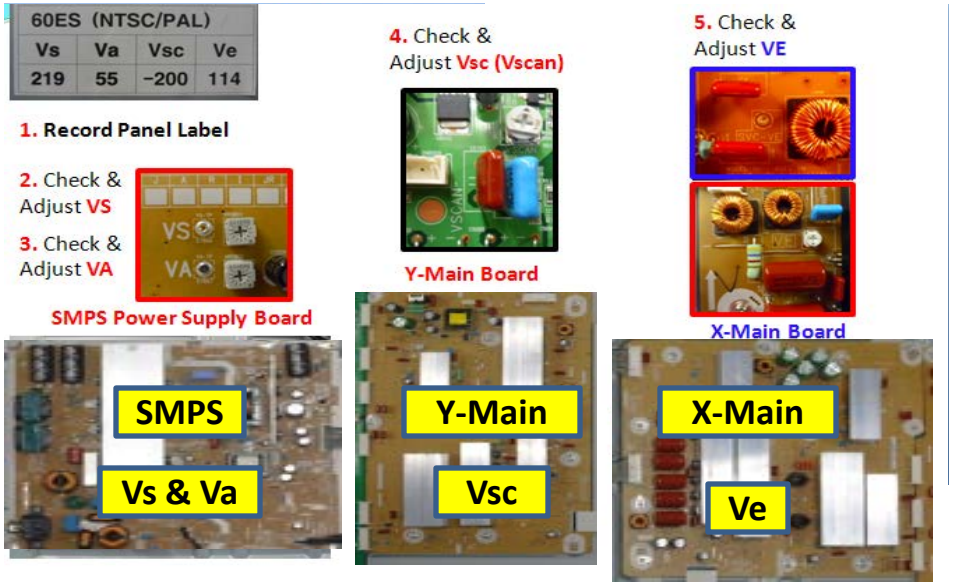
CN801 SMPS to CN201 Main

Pin No.	Signal
1	PS_ON
2	STBY
3	GND
4	VAMP
5	GND
6	GND
7	GND
8	D5.2V
9	GND
10	15V
11	15V
12	D5.2V

Activating Power & Logic Board Test Patterns without Main Board:

1. Remove Power Cord to Panel
2. Short Highest 2 Pin #s on Logic Board Test Jig (Can be 4 Pin or 6 Pin)
3. Remove Power Connector at Main Board (keeping connection to SMPS)
4. Short "Power On" Pin to Circuit Ground on Power Connector to SMPS.
5. Connect Power Cord to Panel





Power Supply Trouble Shooting Notes:

2010/2011/2012 models

Will not be run with the "X" or "Y" main disconnected. The SMPS will shut down immediately. However if a meter is first connected to the test point when power is applied it will read the correct voltage briefly before shut-ting down.(You have enough time to check key voltages)

CAUTION: Do not reconnect any connectors to SMPS or Y/X Boards until power has been turned off long enough for Vs to drop below 10V or damage will occur to X or Y Boards. .

Over Current Protection

For the SMPS Power Supply... If a short circuit occurs on either the VS or VA voltage lines, the SMPS stops operating, but should not fail. When the short circuit is removed from the source line, the Power Supply will operate normally again. **Many SMPS Supplies are replaced needlessly!**

VITAL SIGNS check Vs, Va, Vsc & Ve

When troubleshooting, It's very important to first check **Vs, Va, Vsc & Ve**
If **Vs** is missing (0V), disconnect power and check for short. Use ohm meter to measure resistance while disconnecting Y-Board & X-Board supply feeds one at a time.
Turn Power On and Test SMPS with short connector removed for correct Vs voltage verification. (It may only come up briefly but to full level). Again be careful not to reconnect Power Connectors until Vs falls below 10V.

If **Va** is low or missing, disconnect Supply Feed to Address Boards and Check to see if SMPS Supply is restored. (Note Va feed normally passes through the Y-Drive to the Address Boards (Logic Buffer Boards).

If **Vsc** is low or missing and Vs was OK, the failure is with the **Y-Board** since the Y-Board generate the Vsc voltage from the Vs supplied by the SMPS.
If **Ve** is low or missing and Vs is OK, the failure is with the **X-Board** since the Ve is generated by the X-Board from the Vs supplied by the SMPS. Please note in some rare cases the Ve may be generated by the Y-Board feed to the X-Board.)

Other SMPS Voltages:

Check Low Voltage feeds to the Main Board and other supplied Assemblies.

Function Control Troubleshooting

- ✓ Standby **A3.3V** on Function Connector, Pin 3.
- ✓ All Pins should read **3.3V** before commands.
- ✓ **Press**, at Key 1, Pin 6. 3.3V to 0.0V DC
- ✓ **Left, Right, Up, Down** at Key 2, Pin 7. Check **specific voltages** on chart.

5 Directional Function Control

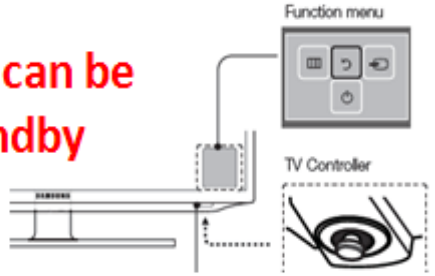
UNEH4000 Sample

CN702 (FUNCTION)

1	IR	5	MSDA
2	GND	6	KEY1
3	A3.3V	7	KEY2
4	MSCL	8	GND

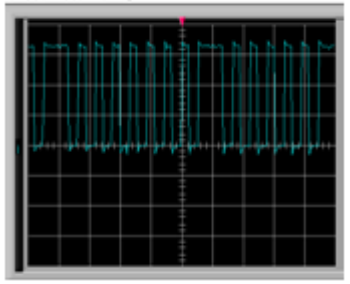
All Functions can be Tested in Standby Mode

(Standby Voltage)



Command	PIN	Signal	DC Voltage/Notes
IR	1	IR	3.3V to 2.5V DC with any Remote Control Commands
Press	6	Key 1	3.3V to 0.0V DC
Left	7	Key 2	3.3V to 1.6V DC
Right	7	Key 2	3.3V to 2.5V DC
Up	7	Key 2	3.3V to 0.0V DC
Down	7	Key 2	3.3V to 0.8V DC

Actual IR Signal



4V P-P Data

TROUBLESHOOTING VIDEO PROBLEMS

1. Verify Video Operation:

A. **Customer Picture Test**
B. **"Display"**
C. If display & Customer Picture Test are OK source is suspected
D. Substitute with known good source and cabling.

2. Using Test Patterns in Service Mode:

Customer Remote
A. Power off
B. Mute, 182, Power

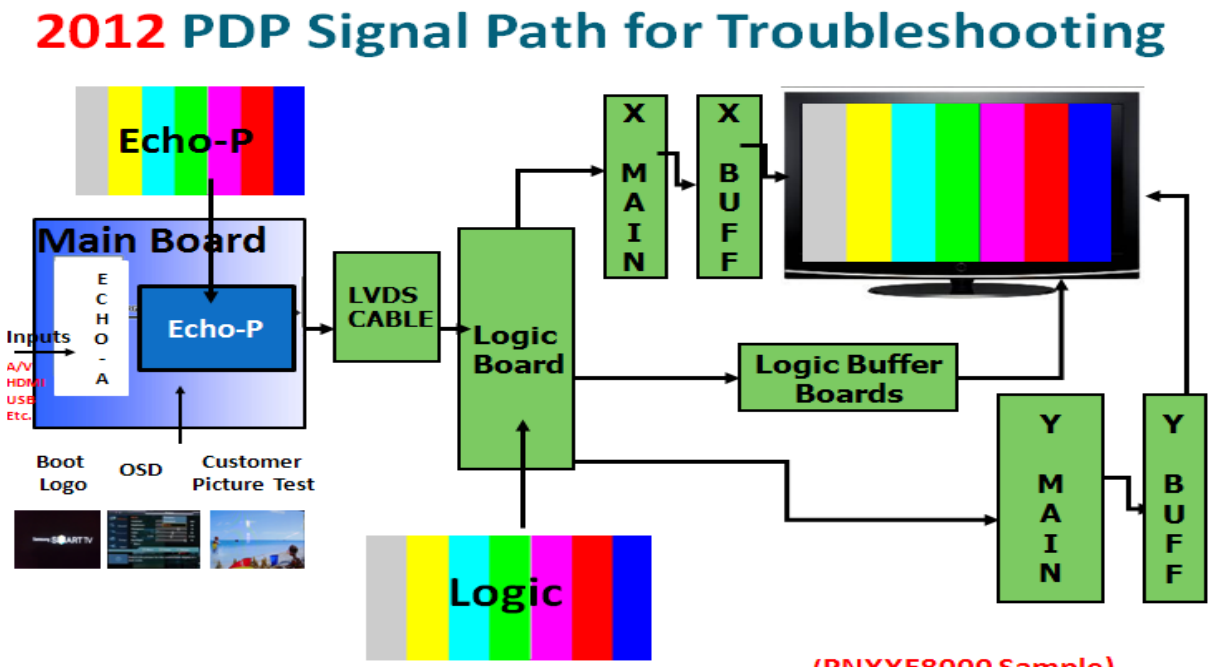
Factory Remote:
A. Power On
B. Info, Test

3. Verify Echo-P Patterns

4. Verify Logic Patterns

If Logic Patterns are OK and Echo-P are noisy, replace the defective LVDS Cable or Main Board.

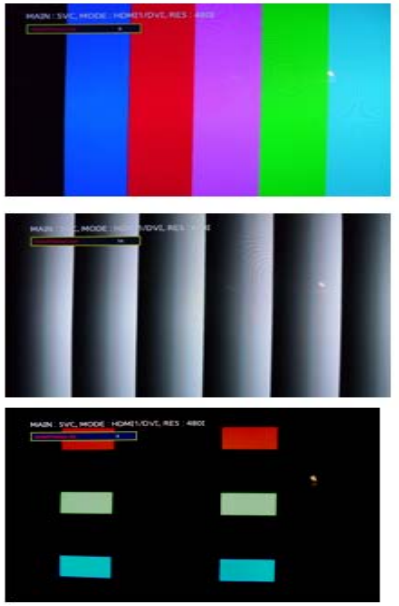
If Echo-P and Logic Patterns are both noisy check for specific on screen noise error to determine failure. (next slide)



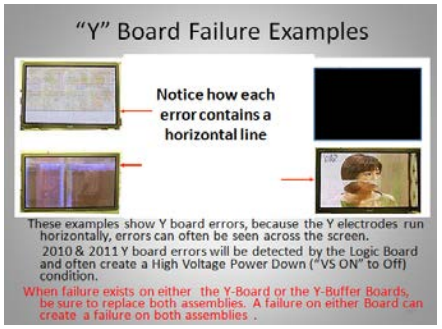
(PNXXE8000 Sample)

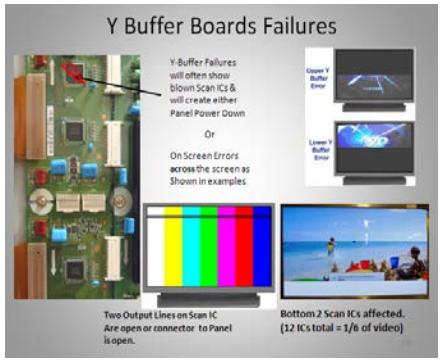
Main Board Patterns Test
Select: EchoP Pattern Sel

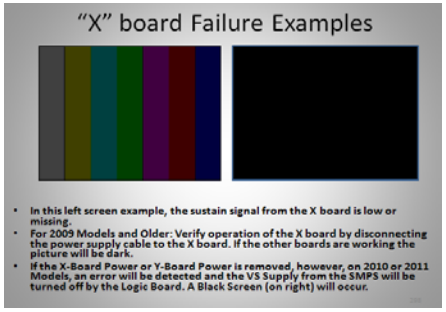
Logic Board Patterns Test
Select: LOGIC Pattern Sel

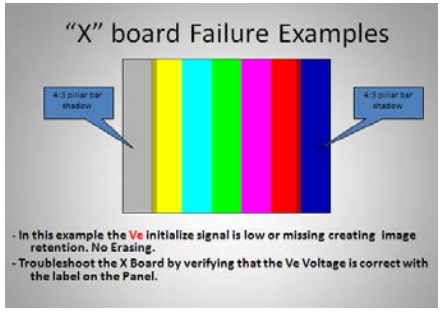


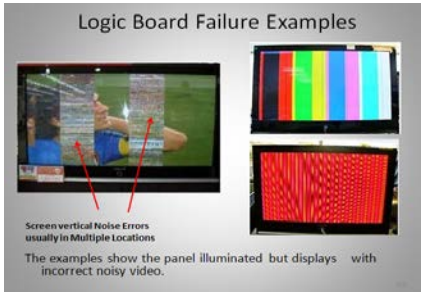
ON SCREEN FAILURE EXAMPLES:
NOTE: X/Y MAIN Combined.

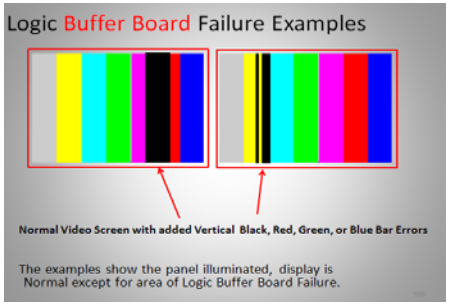


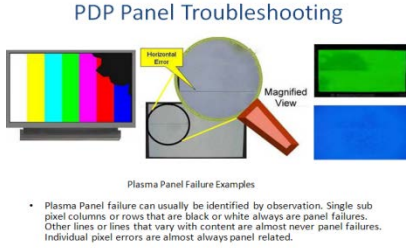












ALIGNMENTS:

1. **Check/Adj. VS, VA, VE, & VSC according to Panel Label and Diffusion test. (see bulletins for any special notes before making changes)**

DIFFUSION TEST/ADJ. (cell miss-firing)
- **Allow the unit to warm up 15 to 20 minutes**
- **Access the Burn Protect Sig. Pattern in Cust. Menu.**
- **Adjust the Vs volts until screen errors are gone in both dark and bright areas.**
- **Adjust the Vs volts within +/- 10V on the panel label.**
- **NOTE: Diffusion may appear with aging panels. New panels with Diffusion consult bulletins and/or report problem.**

2. **Check/Set Option Bytes:**

Option **NOTE: Verify correct settings with latest tips!**

Item	Data	Remark
Factory Reset	-	
Type	**60DSArd**	19A6TH0C ~ 22A6TF0E
Local Set	US	US ~ SA_BOLIVIA
Model	PD6900	LD400 ~ LD567H
Tuner	SI_ATC	SEC_ATSC ~ SI_TW
Front Color	W-Violet	S-C-Gray ~ W-Violet